Appendices A - D

Disclaimer

This draft guidance document is based on the Filter Backwash Recycling Rule and is not a final Agency action. The purpose of this document is solely to provide information to EPA Regions and States. This document does not substitute for EPA's regulation nor does it establish any new legally-binding requirements on EPA, States, or the regulated community. It may not apply to a particular situation based upon the circumstances. The materials contained in this draft of the guidance are subject to change. After modification, this guidance will be reissued.

Table of Contents — Appendices

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Appendix A

Primacy Revision Crosswalk

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FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? EXPLAIN ON SEPARATE SHEET
SUBPART H—FILTRATION AND DISINFECTION			
§141.76 RECYCLE PROVISIONS			
Applicability. All subpart H systems that employ conventional filtration or direct filtration treatment and that recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes must meet the following requirements:	**§141.76 (a)**		
Reporting. A system must notify the state in writing by December 8, 2003, if the system recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes. This notification must include, at a minimum:	**§141.76 (b)**		
• **A plant schematic showing the origin of all flows which are recycled (including, but not limited to, spent filter backwash water, thickener supernatant, and liquids from dewatering processes), the hydraulic conveyance used to transport them, and the location where they are reintroduced back into the treatment plant.**	**§141.76 (b) (1)**		
• **Typical recycle flow in gallons per minute (gpm), the highest observed plant flow experienced in the previous year (gpm), design flow for the treatment plant (gpm), and state-approved operating capacity for the plant where the state has made such determinations.**	**§141.76 (b) (2)**		
Treatment technique requirement. Any system that recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes must return these flows through the processes of a system's existing conventional or direct filtration system as defined in §141.2 or at an alternate location approved by the state by June 8, 2004. If capital improvements are required to modify the recycle location to meet this requirement, all capital improvements must be completed no later than June 8, 2006.	**§141.76 (c)**		

FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? EXPLAIN ON SEPARATE SHEET
Recordkeeping. The system must collect and retain on file recycle flow information for review and evaluation by the state beginning June 8, 2004.	**§141.76 (d)**		
• **Copy of the recycle notification and information submitted to the state under paragraph (b) of this section.**	**§141.76 (d) (1)**		
• **List of all recycle flows and the frequency with which they are returned.**	**§141.76 (d) (2)**		
• **Average and maximum backwash flow rate through the filters and the average and maximum duration of the filter backwash process in minutes.**	**§141.76 (d) (3)**		
• **Typical filter run length and a written summary of how filter run length is determined.**	**§141.76 (d) (4)**		
• **The type of treatment provided for the recycle flow.**	**§141.76 (d) (5)**		
• **Data on the physical dimensions of the equalization and/or treatment units, typical and maximum hydraulic loading rates, type of treatment chemicals used, average dose, frequency of use, and frequency at which solids are removed, if applicable.**	**§141.76 (d) (6)**		
APPENDIX A TO SUBPART Q OF PART 141 - NPDWR VIOLATIONS AND OTHER SITUATIONS REQUIRING PUBLIC NOTICE			
Filter Backwash Recycling Rule violations: **MCL/MRDL/TT violations** **Tier of Public Notice Required — Citation** **2 — 141.76** **Monitoring and testing procedure violations** **Tier of Public Notice Required — Citation** **3 — 141.76**	**I.A.8**		

FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? EXPLAIN ON SEPARATE SHEET
APPENDIX B TO SUBPART Q OF PART 141 - STANDARD HEALTH EFFECTS LANGUAGE FOR PUBLIC NOTIFICATION			
B. Standard Health Effects Language for Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR) and Filter Backwash Recycling Rule (FBRR) violations: **Contaminant MCLG mg/L MCL mg/L Standard Health Effects Language for PN** **7. Cryptosporidium (IESWTR/FBRR)**	**B.7**		

PRIMACY REVISION CROSSWALK FOR THE FBRR		
FEDERAL REQUIREMENT	**FEDERAL CITATION**	**EXPLANATION OF STATE POLICIES AND PROCEDURES**
§ 142.14 RECORDS KEPT BY STATES		
Section 141.76- Any decisions made to approve alternate recycle locations, require modifications to recycle return locations, or require modifications to recycle practices.	**§ 142.14 (a) (4) (ii) (A) (9)**	
§ 142.16 SPECIAL PRIMACY REQUIREMENTS		
Section 141.76(d) of this chapter- States must have the proper rules and authority to use Sanitary Surveys, comprehensive performance evaluations (CPEs), other inspections, or other activities to evaluate recycle data maintained by systems under § 141.76(d) of this chapter and require modifications to recycle practices.	**§ 142.16 (i) (1) (i)**	

Appendix B
FBRR Regulatory Language

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PART 9 - [AMENDED]

1. The authority citation for part 9 continues to read as follows:

Authority: 7 U.S.C. 135 et seq., 136-136y; 15 U.S.C. 2001, 2003, 2005, 2006, 2601-2671; 21 U.S.C. 331j, 346a, 348; 31 U.S.C. 9701; 33 U.S.C. 1251 et seq., 1311, 1313d, 1314, 1318, 1321, 1326-1330, 1324, 1344, 1345 (d) and (e), 1361; E.O. 11735, 38 FR 21243, 3 CFR, 1971-1975 Comp. p. 973; 42 U.S.C. 241, 242b, 243, 246, 300f, 300g, 300g-1, 300g-2, 300g-3, 300g-4, 300g-5, 300g-6, 300j-1, 300j-2, 300j-3, 300j-4, 300j-9, 1857 et seq., 6901-6992k, 7401-7671q, 7542, 9601-9657, 11023, 11048.

2. In § 9.1 the table is amended by adding under the indicated heading the new entry in numerical order to read as follows:

§9.1 OMB Approvals under the Paperwork Reduction Act

* * * * *

40 CFR citation	OMB Control No.
* * * * *	
National Primary Drinking Water Regulations	
* * * * *	
141.76	2040–0224
* * * * *	

PART 141 - National Primary Drinking Water Regulations

3. The authority citation for part 141 continues to read as follows:

Authority: 42 U.S.C. 300f, 300g-1, 300g-2, 300g-3, 300g-4, 300g-5, 300g-6, 300j-4, 300j-9, and 300j-11.

4. Subpart H is amended by adding § 141.76 to read as follows:

§141.76 Recycle Provisions.

(a) Applicability. All subpart H systems that employ conventional filtration or direct filtration treatment and that recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes must meet the requirements in paragraphs (b) through (d) of this section.

(b) Reporting. A system must notify the State in writing by December 8, 2003, if the system recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes. This notification must include, at a minimum, the information specified in paragraphs (b)(1) and (2) of this section.

(1) A plant schematic showing the origin of all flows which are recycled (including, but not limited to, spent filter backwash water, thickener supernatant, and liquids from dewatering processes), the hydraulic conveyance used to transport them, and the location where they are re-introduced back into the treatment plant.

(2) Typical recycle flow in gallons per minute (gpm), the highest observed plant flow experienced in the previous year (gpm), design flow for the treatment plant (gpm), and State-approved operating capacity for the plant where the State has made such determinations.

(c) Treatment Technique Requirement. Any system that recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes must return these flows through the processes of a system's existing conventional or direct filtration system as defined in §141.2 or at an alternate location approved by the State by June 8, 2004. If capital improvements are required to modify the recycle location to meet this requirement, all capital improvements must be

completed no later than June 8, 2006.

(d) Recordkeeping. The system must collect and retain on file recycle flow information specified in paragraphs (d)(1) through (6) of this section for review and evaluation by the State beginning June 8, 2004.

(1) Copy of the recycle notification and information submitted to the State under paragraph (b) of this section.

(2) List of all recycle flows and the frequency with which they are returned.

(3) Average and maximum backwash flow rate through the filters and the average and maximum duration of the filter backwash process in minutes.

(4) Typical filter run length and a written summary of how filter run length is determined.

(5) The type of treatment provided for the recycle flow.

(6) Data on the physical dimensions of the equalization and/or treatment units, typical and maximum hydraulic loading rates, type of treatment chemicals used and average dose and frequency of use, and frequency at which solids are removed, if applicable.

5. Appendix A to Subpart Q of Part 141 is amended by adding a new entry "8." in numerical order under I.A. to read as follows:

APPENDIX A TO SUBPART Q OF PART 141.-NPDWR VIOLATIONS AND OTHER SITUATIONS REQUIRING PUBLIC NOTICE[1]

Contaminant	MCL/MRDL/TT violations[2]		Monitoring & testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
I. Violations of National Primary Drinking Water Regulations (NPDWR):[3]				
A. Microbiological Contaminants				
* * *	*	*	*	*
8. Filter Backwash Recycling Rule violations	2	141.76	3	141.76
* * *	*	*	*	*

Appendix A - Endnotes

1. Violations and other situations not listed in this table (e.g., reporting violations and failure to prepare Consumer Confidence Reports), do not require notice, unless otherwise determined by the primacy agency. Primacy agencies may, at their option, also require a more stringent public notice tier (e.g., Tier 1 instead of Tier 2 or Tier 2 instead of Tier 3) for specific violations and situations listed in this Appendix, as authorized under §141.202(a) and §141.203(a).

2. MCL--Maximum contaminant level, MRDL--Maximum residual disinfectant level, TT--Treatment technique.

3. The term Violations of National Primary Drinking Water Regulations (NPDWR) is used here

to include violations of MCL, MRDL, treatment technique, monitoring, and testing procedure requirements.

* * * * *

6. Appendix B to Subpart Q of Part 141 is amended by revising B and entry "7." under B. to read as follows:

APPENDIX B TO SUBPART Q OF PART 141.-STANDARD HEALTH EFFECTS LANGUAGE FOR PUBLIC NOTIFICATION

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
National Primary Drinking Water Regulations (NPDWR):			
* * *	*	*	* *
B. Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR) and Filter Backwash Recycling Rule (FBRR) violations:			
* * *	*	*	* *
7. Cryptosporidium (IESWTR/FBRR).			
* * *	*	*	* *

Appendix B--Endnotes

1. MCLG--Maximum contaminant level goal
2. MCL--Maximum contaminant level

* * * * *

PART 142-NATIONAL PRIMARY DRINKING WATER REGULATIONS IMPLEMENTATION

7. The authority citation for Part 142 continues to read as follows:

Authority: 42 U.S.C. 300f, 300g-1, 300g-2, 300g-3, 300g-4, 300g-5, 300g-6, 300j-4, 300j-9, and 300j-11.

* * * * *

8. Section 142.14 is amended by removing the word "and" at the end of the paragraph (a)(4)(ii)(A)(7) and revising paragraph (a)(4)(ii)(A)(*8*) and adding paragraph (a)(4)(ii)(A)(*9*) to read as follows:

§ 142.14 Records kept by States.

(a) ***

(4) ***

(ii) ***

(A) ***

(*8*) Section 141.75(b)(2)(iv) - Any decision to allow reduced reporting by a filtered public water system; and

(*9*) Section 141.76 - Any decisions made to approve alternate recycle locations, require modifications to recycle return locations, or require modifications to recycle practices.

* * * * *

9. Section 142.16 is amended by adding paragraph (i) to read as follows:

§ 142.16 Special primacy requirements.

* * * * *

(i) *Requirements for States to adopt 40 CFR part 141, §141.76 Recycle Provisions.* In addition to the general primacy requirements enumerated elsewhere in this part, including the requirement that the State provisions are no less stringent than the federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, §141.76 Recycle Provisions must contain the information specified in this paragraph:

(1) State practices or procedures. (i) Section 141.76(d) of this chapter - States must have the proper rules and authority to use Sanitary Surveys, comprehensive performance evaluations (CPEs), other inspections, or other activities to evaluate recycle data maintained by systems under §141.76(d) and require modifications to recycle practices.

(ii) [reserved]

(2) [reserved]

Billing Code 6560-50-P

Appendix C

Rule Fact Sheet / Quick Reference Guide / Rule Summary for Systems

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United States Environmental Protection Agency | Office of Water (4606) | EPA 816-F-01-033 December 2001

Fact Sheet: Filter Backwash Recycling Rule

The Filter Backwash Recycling Rule (FBRR) addresses the return of certain recycle streams to a conventional or direct filtration facility's treatment process and is intended to reduce the opportunity for recycle practices to adversely affect plant performance. It is expected to prevent microbes such as* Cryptosporidium *from passing through filters into finished drinking water.

IS YOUR PWS AFFECTED?

Your PWS must comply with the FBRR if it is a surface water or GWUDI* system that –

- **Employs conventional or direct filtration; and**
- **Recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes.**

T	Conventional filtration - a series of processes including coagulation, flocculation, sedimentation, and filtration resulting in substantial particulate removal. Conventional filtration is the most common type of filtration.
T	Direct filtration - a series of processes including coagulation and filtration, but excluding sedimentation, and resulting in substantial particulate removal. Typically, direct filtration can be used only with high-quality raw water that has low levels of turbidity and suspended solids.
T	Spent filter backwash water - a stream containing particles that are dislodged from filter media when water is forced back through a filter (backwashed) to clean the filter.
T	Thickener supernatant - a stream containing the decant from a sedimentation basin, clarifier or other unit that is used to treat water, solids, or semi-solids from the primary treatment processes.
T	Liquids from dewatering processes - a stream containing liquids generated from a unit used to concentrate solids for disposal.

*** Ground Water Under the Direct Influence (of surface water)**

WHAT DOES THE RULE REQUIRE?

The FBRR requires affected systems to report recycle practices to the state, maintain specific records, and return recycle to an appropriate location.

What Must I Report?

You must notify the state, in writing, that you practice recycle by December 8, 2003. The notification must include, at a minimum, the following information:

- **A plant schematic showing the origin of all recycle streams, the hydraulic conveyance used to transport them, and the location where they are recycled back into the plant.**
- **Typical recycle flow in gallons per minute (gpm), the highest observed plant flow experienced in the previous year (gpm), design flow for the treatment plant (gpm), and state-approved operating capacity of the plant where the state has made such determinations.**

Where Must I Return My Recycle Streams?

Spent filter backwash water, thickener supernatant, and liquids from dewatering processes must be returned through the processes of the existing conventional or direct filtration treatment plant or at an alternate location approved by the state by June 8, 2004.

What if I don't recycle to a point which allows processing of the water through the processes of my conventional or direct filtration plant?

You must either:

1) **request approval from the state to recycle to an alternative location, or**
2) **begin capital improvements to return your recycle stream to a state-approved location.**

If capital improvements are necessary for compliance, you must complete all improvements by June 8, 2006.

What Other Information Must I Collect?

You must collect and maintain information on specific recycle and backwash flow, frequency, and duration and treatment data. The information must be available for state review and evaluation beginning June 8, 2004. The information may be used as the basis to require modification of your recycle location or recycle practices if it is determined your practices may adversely affect the ability of your system to achieve 2-log, or 99 percent, *Cryptosporidium* removal. This information includes:

- **A copy of the recycle notification and information submitted to the state .**
- **A list of all recycle flows and the frequency with which they are returned.**
- **The average and maximum backwash flow rate through the filters and the average and maximum duration of the filter backwash process in minutes.**
- **A typical filter run length and a written summary of how filter run-length is determined.**
- **The type of treatment provided for the recycle stream.**
- **Data on the physical dimensions of the equalization and/or treatment units, typical and maximum hydraulic loading rates, type of treatment chemicals used and average dose and frequency of use, and frequency at which solids are removed, if applicable.**

For more information, contact EPA's Safe Drinking Water Hotline [800-426-4791], or see the EPA website http://www.epa.gov/safewater/mdbp/mdbp.html

United States Environmental Protection Agency
Office of Water (4606)
EPA 816-F-01-019
June 2001
www.epa.gov/safewater

Filter Backwash Recycling Rule: A Quick Reference Guide

Overview of the Rule

Title	**Filter Backwash Recycling Rule (FBRR) 66 FR 31086, June 8, 2001, Vol. 66, No. 111**
Purpose	**Improve public health protection by assessing and changing, where needed, recycle practices for improved contaminant control, particularly microbial contaminants.**
General Description	**The FBRR requires systems that recycle to return specific recycle flows through all processes of the system's existing conventional or direct filtration system or at an alternate location approved by the state.**
Utilities Covered	**Applies to public water systems that use surface water or ground water under the direct influence of surface water, practice conventional or direct filtration, and recycle spent filter backwash, thickener supernatant, or liquids from dewatering processes.**

Public Health Benefits

Implementation of FBRR will result in . . .	▸ **Reduction in risk of illness from microbial pathogens in drinking water, particularly *Cryptosporidium*.**
Estimated impacts of the FBRR include . . .	▸ **FBRR will apply to an estimated 4,650 systems serving 35 million Americans.** ▸ **Fewer than 400 systems are expected to require capital improvements.** ▸ **Annualized capital costs incurred by public water systems associated with recycle modifications are estimated to be $5.8 million.** ▸ **Mean annual cost per household is estimated to be less than $1.70 for 99 percent of the affected households and between $1.70 and $100 for the remaining one percent of affected households.**

Conventional and Direct Filtration

- **Conventional filtration, as defined in 40 CFR 141.2, is a series of processes including coagulation, flocculation, sedimentation, and filtration resulting in substantial particulate removal. Conventional filtration is the most common type of filtration.**
- **Direct filtration, as defined in 40 CFR 141.2, is a series of processes including coagulation and filtration, but excluding sedimentation, and resulting in substantial particulate removal. Typically, direct filtration can be used only with high-quality raw water that has low levels of turbidity and suspended solids.**

Recycle Flows

- Spent Filter Backwash Water - A stream containing particles that are dislodged from filter media when water is forced back through a filter (backwashed) to clean the filter.
- Thickener Supernatant - A stream containing the decant from a sedimentation basin, clarifier or other unit that is used to treat water, solids, or semi-solids from the primary treatment processes.
- Liquids From Dewatering Processes - A stream containing liquids generated from a unit used to concentrate solids for disposal.

Critical Deadlines and Requirements

For Drinking Water Systems

December 8, 2003	Submit recycle notification to the state.
June 8, 2004	Return recycle flows through the processes of a system's existing conventional or direct filtration system or an alternate recycle location approved by the state (a 2-year extension is available for systems making capital improvements to modify recycle location). Collect recycle flow information and retain on file.
June 8, 2006	Complete all capital improvements associated with relocating recycle return location (if necessary).

For States

June 8, 2003	States submit FBRR primacy revision application to EPA (triggers interim primacy).
June 8, 2005	Primacy extension deadline - all states with an extension must submit primacy revision applications to EPA.

What does a recycle notification include?

- Plant schematic showing origin of recycle flows, how recycle flows are conveyed, and return location of recycle flows.
- Typical recycle flows (gpm), highest observed plant flow experienced in the previous year (gpm), and design flow for the treatment plant (gpm).
- State-approved plant operating capacity (if applicable).

What recycle flow information does a system need to collect and retain on file?

- Copy of recycle notification and information submitted to the state.
- List of all recycle flows and frequency with which they are returned.
- Average and maximum backwash flow rates through filters, and average and maximum duration of filter backwash process (in minutes).
- Typical filter run length and written summary of how filter run length is determined.
- Type of treatment provided for recycle flows.
- Data on the physical dimension of the equalization and/or treatment units, typical and maximum hydraulic loading rates, types of treatment chemicals used, average dose, frequency of use, and frequency at which solids are removed, if applicable.

For additional information on the FBRR

Call the Safe Drinking Water Hotline at 1-800-426-4791; visit the EPA web site at www.epa.gov/safewater; or contact your state drinking water representative.

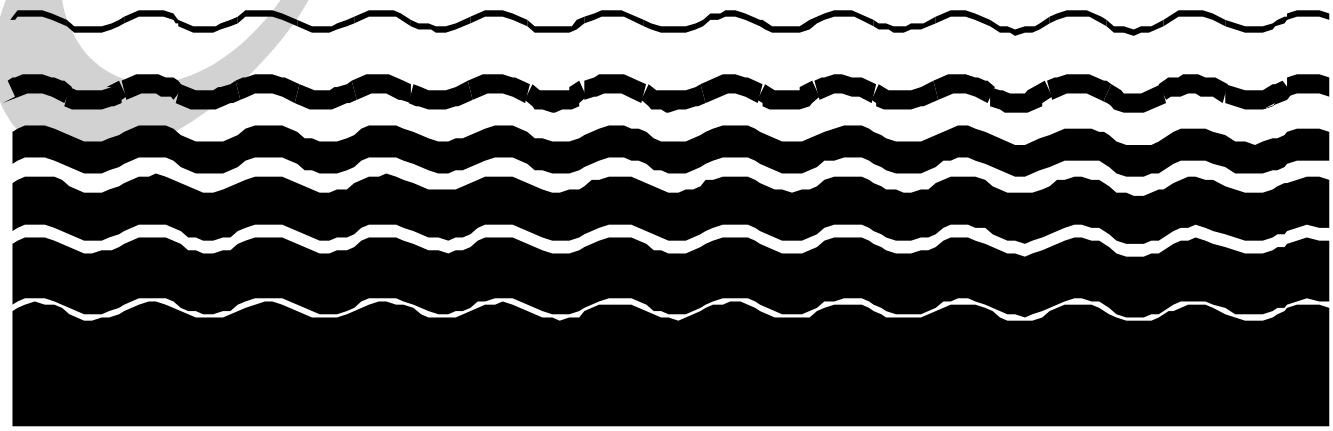
Additional material is available at www.epa.gov/safewater/filterbackwash.html.

United States
Environmental Protection
Agency

Office of Water
(4606)

EPA 816-K-01-005
December 2001

Filter Backwash Recycling Rule:
A Rule Summary for Systems



The SDWA provisions and EPA regulations described in this document contain legally binding requirements. This document does not substitute for those provisions or regulations, nor is this document regulation itself. Thus, it cannot impose legally binding requirements on EPA, States, or the regulated community, and may not apply to a particular situation based upon the circumstances.

Filter Backwash Recycling Rule: A Rule Summary for Systems

BACKGROUND

What is the purpose of the rule?

The Filter Backwash Recycling Rule (FBRR) is intended to reduce the opportunity for recycle practices to adversely affect the performance of drinking water treatment plants and to help prevent microbes, such as *Cryptosporidium,* from passing through treatment systems and into finished drinking water. Customers may become ill if they drink such contaminated water.

Filter backwash water, sludge thickener supernatant, and liquids from dewatering processes can contain microbial contaminants, often in very high concentrations. Recycling these streams can reintroduce microbes and other contaminants to the treatment system. Additionally, large volumes of recycle streams may upset treatment processes, allowing contaminants to pass through the system. To minimize these risks, the FBRR requires that recycle streams pass through all the processes of a system's existing conventional or direct filtration system (as defined in 40 CFR 141.2) that the Environmental Protection Agency (EPA) has recognized as capable of achieving 2-log (99 percent) *Cryptosporidium* removal. The FBRR also allows recycle streams to be reintroduced at an alternate location, if the location is State-approved.

What is *Cryptosporidium*?

Cryptosporidium is an intestinal parasite that can be passed through a water treatment plant and into the drinking water supply. Infection can cause gastro-intestinal illness, lasting up to two weeks, and may even be life-threatening for people with weakened immune systems. Several outbreaks of cryptosporidiosis have been traced to *Cryptosporidium* in drinking water. The worst outbreak occurred in Milwaukee in 1993 when more than 400,000 people fell ill with flu-like symptoms. *Cryptosporidium* is difficult to remove from water because it is resistant to most disinfectants used by water treatment systems. Consequently, other treatment processes, such as sedimentation and filtration, must be effective in removing *Cryptosporidium* oocysts from raw water and recycle streams.

Which systems are affected by the FBRR?

(Rule reference: 40 CFR 141.76(a))

Public water systems that meet <u>all</u> of the following criteria are subject to the FBRR:

- The system is a Subpart H system, defined in 40 CFR 141.70 as using surface water or ground water under the direct influence of surface water (GWUDI).
- The system treats water using conventional or direct filtration. (See the box on page 2 for definitions of conventional and direct filtration.)
- The system recycles one or more of the following: spent filter backwash water, sludge thickener supernatant, or liquids from dewatering processes.

Conventional Filtration

Conventional filtration treatment, as defined in 40 CFR 141.2, is a series of processes including coagulation, flocculation, sedimentation, and filtration resulting in substantial particulate removal. Conventional filtration is the most common type of filtration.

Direct Filtration

Direct filtration, as defined in 40 CFR 141.2, is a series of processes including coagulation and filtration, but excluding sedimentation, and resulting in substantial particulate removal. Typically, direct filtration can be used only with high-quality raw water that has low levels of turbidity and suspended solids.

What are the requirements of the FBRR?

The FBRR has two main components:

1. **Recycle Return Location.** The FBRR requires spent filter backwash water, sludge thickener supernatant, and liquids from dewatering processes to be returned through all processes of a system's existing conventional or direct filtration system, as defined in 40 CFR 141.2. However, a system may recycle at an alternate location if allowed by the State. More information on recycle return location is provided in Section 1 beginning on page 3.

2. **Reporting and Recordkeeping.** The FBRR includes reporting and recordkeeping requirements related to recycling procedures. These requirements are outlined in greater detail in Section 2 beginning on page 5.

Recycle and Regulated Recycle Streams

Recycle – The act of returning recycle streams to a plant's primary treatment process.

Recycle Streams – Any water, solid or semi-solid generated by a plant's treatment processes, operational processes, and residual treatment processes that is returned to the plant's primary treatment process.

Spent Filter Backwash Water – A stream containing particles that are dislodged from filter media when water is forced back through a filter (backwashed) to clean the filter. Spent filter backwash water contains particles including coagulants, metals, and microbes such as *Cryptosporidium*.

Thickener Supernatant – A stream containing the decant from a sedimentation basin, clarifier or other unit that is used to treat water, solids, or semi-solids from the primary treatment processes. The "clear water" that exits the units after particles have been allowed to settle out is thickener supernatant (or sludge thickener supernatant).

Liquids for Dewatering Processes – A stream containing liquids generated from a unit used to concentrate solids for disposal. Processes may consist of centrifuges, filter presses, belt presses, vacuum filters, monofills, or other sludge concentrating equipment. Such equipment may be used to dewater sludge from treatment units used in recycling processes or sludge from units found in the primary processes.

SECTION 1
RECYCLE RETURN LOCATION

(Rule reference: 40 CFR 141.76(c))

Why is the point of return for recycle streams important?

To ensure at least 2-log (99 percent) *Cryptosporidium* removal, recycle streams should be introduced at a point in the treatment plant that incorporates all treatment processes of a conventional or direct filtration system or at an alternate location approved by the State. The point of introduction should ensure effective mixing and thorough dispersion of the recycle stream with raw water prior to subsequent treatment. The continuous and steady introduction of recycle streams will have a much less negative impact on the water treatment process than will the sporadic introduction of larger volume recycle streams that vary in quality and quantity.

How can a plant that does not return its recycle streams through all treatment processes comply with the FBRR?

A system whose recycle streams do not pass through all the direct or conventional treatment plant's unit processes has two options:

- Begin the necessary capital improvements to move the recycle location. Any such capital improvements must be completed by June 8, 2006.

- Request approval of an alternate recycle location. Any requests for alternate recycle locations must be approved by the State no later than June 8, 2004. If capital improvements are required to return recycle streams to a State- approved recycle location, all capital improvements must be completed by June 8, 2006.

An example of a filter being backwashed with air scour.

What factors will the State consider in deciding whether to approve an alternate location?

Each State has the flexibility to determine the criteria and factors they will utilize in evaluating and approving alternate recycle locations. Examples of factors that a State may use to evaluate requests for alternate recycle locations include:

- Does the plant require recycle to an alternate recycle location to maintain optimal finished water quality?

- Is the plant designed to employ recycle streams as an intrinsic component of the treatment process?

- Does the plant have unique treatment requirements or processes that require the return of recycle streams to an alternate location?

- Does treated water meet the 2-log (99 percent) removal of *Cryptosporidium* oocysts with the return of recycle streams to an alternate location?

What if a proposed or current alternate recycle location has not received State approval?

If a system returns recycle to a location which does not provide treatment by all conventional or direct filtration processes (as defined in 40 CFR 141.2) without State approval, it commits a treatment technique violation which requires Tier 2 public notification. (See the box at right for a discussion of violation categories.) Failure to notify the public within the appropriate time frame will result in a public notification violation. A system has until June 8, 2004 to receive State approval of its alternate recycle location.

Violations & Public Notification

EPA has assigned each violation and situation requiring public notice to one of three categories, or tiers, based on the risk of adverse health effects. After you learn of a violation or situation, public notice must be provided according to the following requirements:

- **Tier 1 –** requires public notice within 24 hours by broadcast media, hand delivery, posting, or another method to reach others.
- **Tier 2 –** requires public notification within 30 days by mail, hand delivery, or another method to reach others.
- **Tier 3 –** requires public notification within one year by mail, hand delivery, or another method to reach others.

What if a system does not complete capital improvements within the specified time period?

If capital improvements are required to comply, a system must complete such improvements no later than June 8, 2006. A system that does not complete capital improvements by the required date commits a treatment technique violation, which requires Tier 2 public notification. Failure to notify the public within the appropriate time frame is a public notification violation.

Are funds (grants, loans, etc.) available for making capital improvements?

No special funds have been set aside for improvements to meet the FBRR. However, the Drinking Water State Revolving Loan Fund is available to assist in funding infrastructure upgrades that will ensure safe drinking water. More information about the Drinking Water State Revolving Loan Fund is available at www.epa.gov/safewater/dwsrf.html. Systems may also contact the Safe Drinking Water Hotline at 1-800-426-4791, or by e-mail at hotline-SDWA@epa.gov. EPA also provides funding to States that have primary enforcement responsibility for their drinking water programs through the Public Water Systems Supervision (PWSS) grants program. Other Federal funds are available through the Housing and Urban Development's Community Development Block Grant Program and the Rural Utilities Service of the U.S. Department of Agriculture. Individual States may have other loan or grant programs that could provide additional funding for necessary capital improvements. Contact your State for more information regarding such programs.

TABLE I:
Recycle Return Location Compliance Schedule

If:	You Must:	By:
Capital improvements are necessary to relocate the point of recycle return . . .	complete all improvements . . .	June 8, 2006
You are planning to request State approval for use of an alternate location . . .	receive approval from the State . . .	June 8, 2004
You are planning to request State approval for use of an alternate location AND capital improvements are necessary . . .	receive approval from the State for alternate recycle return location . . .	June 8, 2004
	complete all improvements . . .	June 8, 2006
No capital improvements are necessary and you are not seeking approval for an alternate location . . .	meet only the reporting and record-keeping requirements of the FBRR.	See the Reporting and Recordkeeping Checklist on page 7.

SECTION 2
REPORTING AND RECORDKEEPING REQUIREMENTS

What information must be submitted to the State?
(Rule reference: 40 CFR 141.76(b))

Each system that uses conventional or direct filtration and recycles spent filter backwash water, sludge thickener supernatant, or liquids from dewatering processes must provide the State with the following written information by December 8, 2003:

- A plant schematic showing the origin of all recycle streams, how the recycle streams are transported, and the location where the recycle streams enter the treatment process;

- Typical recycle flow, highest observed plant flow experienced in the previous year, and design flow for the treatment plant (all flows must be reported in gallons per minute); and

- The State-approved operating capacity for the plant, if the State has made such a determination.

The submitted data will be evaluated by the State to determine whether a hydraulic surge from the recycle streams may cause a plant to exceed its operating capacity. A system that fails to submit this information to the State commits a monitoring/reporting violation, which requires Tier 3 public notification. Failure to notify the public within the appropriate time period is a public notification violation.

What additional data must be collected and maintained?

(Rule reference: 40 CFR 141.76(d))

In addition to the information submitted to the State, a system must collect and maintain the following data to comply with the FBRR. This information must be collected by June 8, 2004.

- A copy of all information listed above that is submitted to the State.
- A list of recycle streams and the frequency with which they are returned.
- Average and maximum backwash flow rates through the filters and the average and maximum durations of the filter backwash process, in minutes.
- Typical filter run length and a written summary of how filter run length is determined (headloss, turbidity, time, etc.).
- The type of treatment provided for the recycle stream **before** it re-enters the conventional or direct filtration process.
- If applicable, data about the physical dimensions of the equalization or treatment units, typical and maximum hydraulic loading rates, type of treatment chemicals used, average dose of chemicals, frequency of chemical addition, and frequency of solids removal.

The conveyer is used to transport sludge from the centrifuge (in the background) after dewatering.

Systems are not required to submit this information unless requested to do so by the State. However, the information must be available at the treatment plant for State review during sanitary surveys, Comprehensive Performance Evaluations (CPEs), or other site visit activities. After the State reviews this information, a system may be required to modify its recycling practices. Failure to comply with the reporting requirements is a monitoring/reporting violation, which requires Tier 3 public notification. Failure to notify the public within the appropriate time frame is a public notification violation.

What are other sources of information on the FBRR and other drinking water treatment issues?

When completed, the Filter Backwash Recycling Rule Technical Guidance Manual will be available at www.epa.gov/safewater/filterbackwash.html. It will provide greater detail on many of the topics mentioned in this document. In addition, the Filter Backwash Recycling Rule Implementation Guidance that provides guidance to States on rule implementation is also under development from EPA.

The Filter Backwash Recycling Rule can be found at www.epa.gov/safewater/filterbackwash.html.

Copies of these documents may be ordered through EPA's Safe Drinking Water Hotline (1-800-426-4791), the National Service Center for Environmental Publications (1-800-490-9198), or the National Technical Information Service at (1-800-553-6847) or Khttp://www.ntis.govwww.ntis.gov.

EPA's Safe Drinking Water Hotline (1-800-426-4791) can also provide general drinking water information. You may e-mail the Safe Drinking Water Hotline at hotline-SDWA@epa.gov. Also, the EPA Office of Ground Water and Drinking Water web page is a good source of general drinking water information (www.epa.gov/safewater).

Table II:
Reporting and Recordkeeping Checklist

Information Qualifying Systems Must Submit to the State by December 8, 2003	
Plant Schematic	
Origin of recycle streams	
Recycle stream transport	
Point where recycle stream enters treatment train	
Typical recycle flow (in gpm)	
Highest observed plant flow (in gpm) for previous year	
Design flow for treatment plant (gpm)	
State-approved operating capacity	
Information Qualifying Systems Must Collect and Maintain Onsite by June 8, 2004	
Copy of information submitted to the State	
List of recycle streams	
Frequency with which recycle streams are returned	
Average backwash flow rate	
Maximum backwash flow rate	
Average duration of filter backwash (in minutes)	
Maximum duration of filter backwash (in minutes)	
Typical filter run time (in minutes)	
How is run time determined (turbidity, time, head loss, other)	
Type of treatment	
Dimensions of equalization unit(s) (if applicable)	
Dimensions of treatment unit(s) (if applicable)	
• Typical/average hydraulic loading rates	
• Maximum hydraulic loading rates	
• Type of treatment chemicals	
• Average dose of chemicals	
• Frequency of chemical addition	
• Frequency of solids removal	

Appendix D

SDWIS-Fed Reporting Guidance

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This section is under development